

Remarks

Claims 1, 3-6, 8, 11-14, and 28-58 are pending in the application. The position set forth in the Office Action has been carefully considered. Reconsideration is respectfully requested.

I. REJECTIONS OF CLAIMS 1, 3-8, AND 11-23 UNDER 35 U.S.C. §§ 102 AND 103

Claims 1, 5, 6, 11-14, 28-33, 36-41, and 44-58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of U.S. Patent No. 6,496,477 ("Perkins") and U.S. Patent No. 6,370,112 ("Voelker"). Claims 3, 4, 34, 35, 42, and 43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of Perkins, Voelker, and U.S. Patent No. 5,751,956 ("Kirsch"). All pending claims are believed to be allowable for at least the following reasons. Withdrawal of the rejection is respectfully requested.

The inventions defined in the pending claims are directed to a method, an apparatus and a computer program product for replicating a plurality of original packets in a packet flow received by a first device.

Independent Claims 1 and 28-30

Independent claim 1 requires, *inter alia*, "the packet flow following a first routing path between a source device and a destination device," "the first routing path including the first device," "receiving *both directions* of the packet flow with the first device," "in the first device, identifying the original packets from *both directions* of the packet flow according to the at least one predetermined criterion," and "transmitting the original packets from the first device along the first routing path *to the source and destination devices*." Independent claims 28-30 each contain recitations corresponding to those of independent claim 1.

According to a specific exemplary embodiment of the invention, the test device 112 (e.g., a packet sniffer) can remotely monitor all or a specified subset of the traffic through the router 106. For example, the client machine 102 resident on the LAN 104 communicates via the router 106 and the WAN 108 with the server 110. The router 106 identifies the packets of interest. Once the packets of interest have been identified, they are replicated by the router 106. Then, the packets of interest are transmitted by the router 106 along their original routing path to the original destination, i.e., the client 102 or the server 110. Also, the replicated packets are transmitted by the router 106 to the test device 112 along a different routing path. Thus, in this exemplary embodiment, the router 106 receives both directions of the packet flow between the client 102 and the server 110. In summary, one of the exemplary embodiments of the invention enables troubleshooting of a bidirectional packet flow.

The Office Action newly cited the Voelker patent as describing the claimed processing of data packets in both directions. It is respectfully submitted that Voelker does not teach in any way, *inter alia*, "identifying the original packets from *both directions* ... according to the at least one predetermined criterion," as claimed. Voelker merely teaches carrying cells in both directions (e.g., column 6, lines 23-25) in general. However, independent claims 1 and 28-30 each recite bidirectional packet processing in a more specific way. Therefore, a mere teaching of bidirectional cells cannot be said to affect the patentability of these independent claims. The assertion by the Examiner that Voelker's general description of bidirectional cells teaches the claimed specific bidirectional scheme is overly broad, and lacking appropriate citations to a reference to constitute a proper rejection in the context of the claimed invention. In summary, the Voelker patent fails to cure the deficiencies of the Perkins patent.

Furthermore, as discussed in detail in the previous responses, the Perkins patent fails to teach or suggest identifying the original packets ... according to the at least one predetermined criterion as claimed. It merely shows a system which "make[s] probable that the distinct streams of packets 111 and their dependent packets 113 will traverse different routes 119 and 117 through the network 100 from source 103 to destination 105." However, nothing in Perkins shows identifying packets in a packet flow.

Most notably, the portion cited by the Examiner regarding use of reference numeral "i" in Fig. 1 has nothing to do with identification of packets. Rather, the reference numeral "i" merely indicates that the components with such a reference are associated with the computer 105. See, column 7, lines 13-20 of Perkins. For example, the microphone 161.i, the loudspeaker 162.i, etc. correspond to the computer 105 while the microphone 161.1, the loudspeaker 162.1, etc. correspond to the computer 103. It is respectfully submitted that Perkins' reference numerals in no way suggests, implicitly or explicitly, identifying original packets in a packet flow according to at least one criterion as claimed. Therefore, the Perkins patent cannot be said to teach the claimed element recited in independent claims 1 and 28-30 in this regard as well.

In view of the foregoing, independent claims 1 and 28-30, and their dependent claims are believed to be allowable over the cited art. Withdrawal of the rejections is respectfully requested.

Independent Claims 8 and 31-33

Independent claim 8 requires, *inter alia*, "determining which of the original and replicate packets reach their respective destination devices first, thereby identifying a winner destination device," and "awarding a connection to an originating device to the winner destination device."

Independent claims 31-33 each contain recitations corresponding to those of independent claim 8.

One specific exemplary embodiment of the invention enables load balancing scheme which awards connection to an originating device to the winner destination device. By contrast, none of the cited references teach or suggest the claimed load balancing features. The Office Action cites various portions of the Perkins patent as describing the claimed load balancing scheme. However, these cited portions of Perkins are not relevant to the claimed invention because the objective of Perkins is to select two intermediate nodes, thereby providing path diversity (e.g., column 9, lines 63-64).

The Perkins system sends real-time information via a proxy A, and dependent information via a proxy B as shown in Fig. 14 (column 26, lines 7-35). Perkins' primary concern is to identify *two or more* appropriate proxies for path diversity communications (column 33, line 52 - column 34, line 14, and Fig. 14). As such, nothing in Perkins implicitly, explicitly, or inherently shows identifying a winner destination device as claimed. It is respectfully submitted that Perkins is silent on determining which of the original and replicate packets reach their respective destination devices first. Further, the cited portions fail to teach or suggest awarding a connection to an originating device to the winner destination device as claimed.

In summary, the Perkins patent fails to teach the claimed load balancing scheme. Therefore, the Perkins patent cannot affect the patentability of independent claims 8 and 31-33. As discussed above, the Voelker patent was cited as describing bidirectional cells. The Voelker patent has been reviewed, and found not to overcome the deficiencies of the Perkins patent.

In view of the foregoing, independent claims 8 and 31-33, and their dependent claims are believed to be allowable over the cited art. Withdrawal of the rejections is respectfully requested.

Independent Claims 41 and 52-58

Independent claim 41 requires, *inter alia*, "the packet flow corresponding to a destination," "transmitting the original packets from the first device along the first routing path to the destination," "transmitting the replicate packets from the first device along a second routing path, the second routing path ... including the second device," and "the destination [which] is different from the second device." Other independent claims 52-58 contain recitations similar to those of claim 41.

As a preliminary matter, the Office Action states that "claim 41 is rejected for the same reasons set forth in claim 1." However, as identified above, independent claim 41 recites at least one aspect of the invention, which is different from that of claim 1. Therefore, Applicants respectfully request that the Examiner specifically identify relevant portions of the references to constitute a proper rejection.

According to an exemplary embodiment of the invention, the test device 112 (e.g., a packet sniffer) can remotely monitor all or a specified subset of the traffic through the router 106. For example, the client machine 102 resident on the LAN 104 communicates via the router 106 and the WAN 108 with the server 110. The router 106 identifies the packets of interest. Once the packets of interest have been identified, they are replicated by the router 106. Then, the packets of interest are transmitted by the router 106 along their original routing path to the original destination, i.e., the client 102 or the server 110. Also, the replicated packets are transmitted by the router 106 to the test device 112 along a different routing path. Thus, in this exemplary embodiment, the original destination of the packets of interest is the server 110 while the replicate packets' destination is the test device 112, which is different from the server 110.

By contrast, none of the cited references teach or suggest the above-identified claimed feature, *inter alia*, the replicate packets are transmitted along the second routing path including the second device, where the destination of the [original] packet flow is different from the second device. For example, the Perkins patent is directed to a path diversity mechanism (column 3, line 61 - column 4, line 11). In order to provide redundancy in delivering packets, the Perkins system provides multiple paths from the computer 103 (the origin) to the computer 105 (the destination) (column 6, lines 18-31). As indicated in Fig. 1 of Perkins, both of the two paths 117 and 119 have the same destination, that is, the computer 105. See, e.g., column 6, lines 32-41 of Perkins.

It is respectfully submitted that the Perkins patent is silent on transmitting replicate packets to a second device which is different from an original destination of the packet flow as claimed. Perkins' path diversity in no way suggests, implicitly or explicitly, that replicate packets are transmitted to a different destination as claimed. Therefore, the Perkins patent cannot be said to teach or suggest the above-identified claimed feature.

The Voelker patent has been reviewed, and found not to overcome the deficiencies of the Perkins patent. In view of the foregoing, independent claims 41 and 52-58, and their dependent claims are believed to be allowable over the cited art. Withdrawal of the rejections is respectfully requested.

II. CONCLUSION

Applicants believe that all pending claims are in condition for allowance, and respectfully request a Notice of Allowance at an early date. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 510-663-1100, ext. 245.

Respectfully submitted,
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Limited Recognition under 37 CFR § 10.9(b)

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